CSI 2125-IS Machinery Health Analyzer

- Intrinsically safe ATEX Zone 0 and IECEx certified for monitoring the health of machines in hazardous area locations
- Emerson's PeakVue technology allows for earlier detection of bearing and gear defects
- Integration with AMS Suite: Machinery Health Manager keeps the data for all your assets in a single database
- The combination touchscreen LCD and dual-entry keys is a convenient approach to facilitating left- and right-hand operation
- The intuitive user interface requires less training, faster implementation

The CSI 2125-IS Machinery Health Analyzer complements your existing route-based maintenance program by allowing machinery monitoring in intrinsically safe areas.

Overview

A portable vibration analyzer is the cornerstone of a typical predictive maintenance program. But in some cases the hazardous nature of the plant environment requires intrinsically safe technology in order to meet route-based monitoring needs. The ability to quickly and accurately identify developing faults does not have to be sacrificed to keep personnel and production safe.

The intrinsically safe CSI 2125-IS Machinery Health Analyzer meets industry standards for use in hazardous environments. Users can collect important information on rotating equipment without acquiring hot work permits or putting themselves and others in unnecessary danger. Industries such as oil and gas, chemical, mining, grain processing, and water treatment often have intrinsic safety regulations that require the use of certified instruments for data collection.

Easy Operation

Users interact with the CSI 2125-IS using either the touchscreen menus or the function keys located on the faceplate. In either case, intuitive menus guide the user to select route or off-route data collection modules, review data, or edit the analyzer's global settings. Left and right enter buttons make initiating data collection easy for all users.

At 1.5 lbs, the ergonomic design of the CSI 2125-IS is easily portable for all-day data collection. The rugged impact-resistant construction delivers reliable operation in harsh industrial environments.

In the Route module the CSI 2125-IS can collect the vibration spectrum, waveform and overall data.

EMERSON™
Process Management

The analyzer can collect the spectrum and up to 12 narrow band parameters that can be trended and trigger alarms in AMS Machinery Manager when preset thresholds are crossed. The Overall reading indicates the previous level as compared to the current level. Red, amber, and green LED indicators indicate the status of the data collection and whether or not the unit detected a problem.

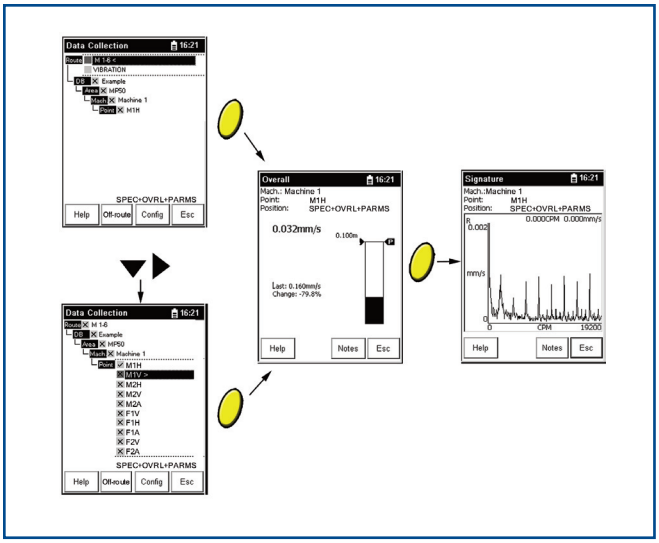
Cover all the important assets of the plant

Using an intrinsically safe analyzer for data collection eliminates the need to acquire hot work permits or to exclude assets in safety rated areas from the route. When the CSI 2125-IS is used in conjunction with the industry-leading CSI 2130 Machinery Health Analyzer to monitor assets in non-intrinsically safe areas, you are assured that all rotating assets in the plant are monitored safely and accurately.

Detect the Earliest Sign of Bearing and Gear Wear

Emerson's PeakVue™ capability applies digital technology to detect stress waves, which are the earliest indication of bearing and gear wear. Demodulation and other acceleration enveloping technologies typically cannot detect such faults until much later, after the machine is already damaged. PeakVue technology also provides an indication of fault severity. Measurements are repeatable, creating reliable trends for determining the optimal timing for maintenance.

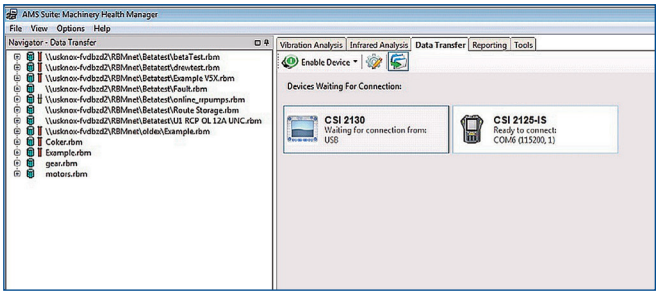
With PeakVue the waveform is critical in determining the fault diagnosis and severity, providing more insight to the machinery health than traditional spectrum analysis.



Navigate through the route to select a point for data collection. The analyzer will display the overall measurement and waveform during collection before returning to the route navigation menu.

Integrated with AMS Suite: Machinery Health Manager

Like the CSI 2130, the CSI 2125-IS communicates with the AMS Machinery Manager software using the same data transfer application to load and unload routes. Likewise the same analysis applications are used to analyze the vibration data, reducing the need to learn and use multiple applications. This data can be integrated with the many other supported technologies in AMS Machinery Manager such as oil and infrared data to provide a comprehensive view of the machinery health. It is this comprehensive view of machinery health that allows you to plan and prioritize maintenance action when it is most economical.

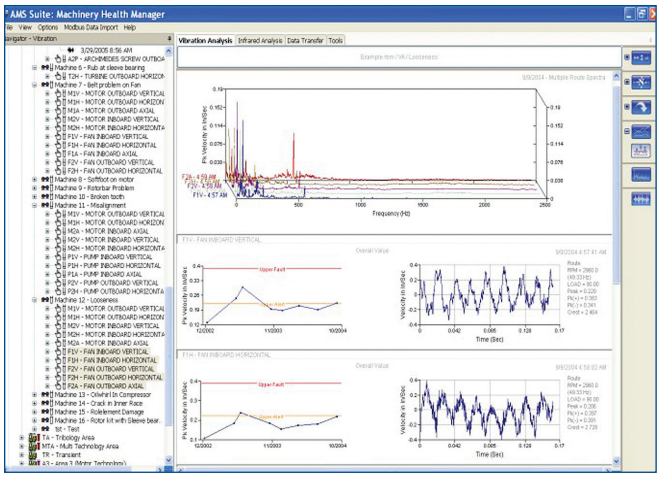


Data Transfer incorporates route communications for the CSI 2125-IS.

Flexible Analysis Interface

With AMS Machinery Manager, you can view data more efficiently because you don't need to constantly switch screens. All plots can be displayed as full screen or several plots can be combined in a single window. With multiple monitor support, separate plots can be displayed on up to three monitors. Common applications of this powerful flexibility include:

- Looking at three directions: the X, Y, and Z plot in a single screen.
- Viewing the complete machine component: all measurement points on a motor in a single screen.
- Viewing a complete machine.
- Viewing similar machines from more than one database.
- Selecting how many and what types of plots will appear in your view.
- Identifying changes in data from month to month.



Quickly Determine Machine Status

Use the AMS Machinery Manager Parameter Status Profile to quickly view parameter alarm status of a machine with a simple, configurable color selection (like green, yellow, and red). This capability helps you to determine where additional attention is needed.

Fine Tune Alarms

During your analysis or after you have had time to acquire several months of data, you may need to adjust your original alarm setups. The Automated Statistical Limit Calculation module can take data from vibration patterns and construct narrowband alarms. Envelope alarms can also be manually defined and created from a reference spectrum.

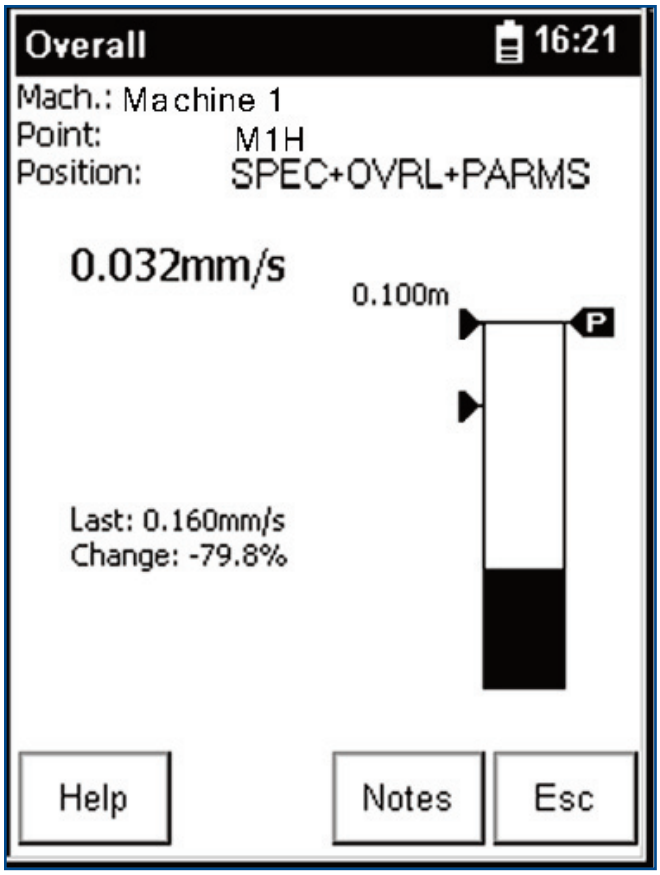
Intrinsic Safety Certifications

The CSI 2125-IS Machinery Health Analyzer has one of the highest levels of intrinsic safety available for a portable vibration handheld instrument. It is rated Group I (Mining) and Group II (Petrochemical) for both ATEX and IECEx from the European regulatory agency SIRA.

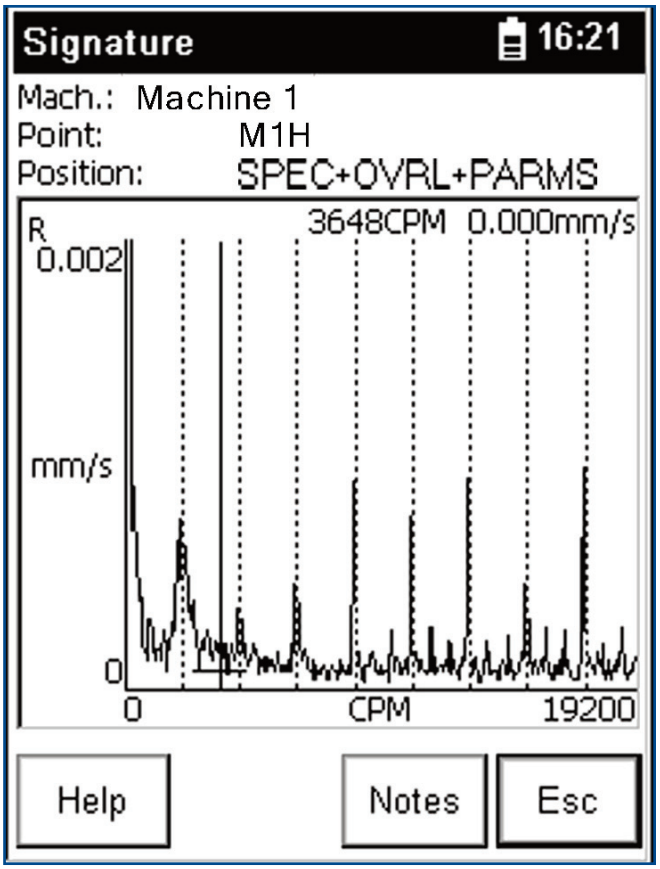
- ATEX and IECEx

II 1G
I M1

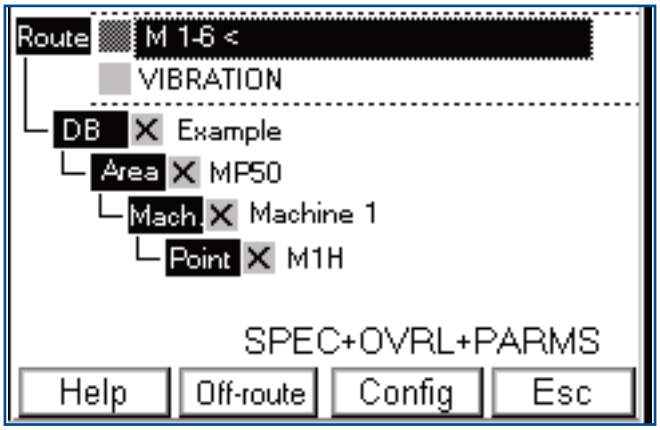
- Ga Ex ia IIC T4 (Ta –20 to +50 °C)
- Ma Ex ia I (Ta 0 to +50 °C)
- Complete system includes ATEX approved sensor



The analyzer displays the overall measurement showing the previous and current overall readings.



The analyzer also displays the spectrum during data collection.



Navigate through the route to select a point for data collection.

Specifications

INPUT SOURCES

- Input Signal Types:
  ICP™ Accelerometers, Velocity Transducers, Displacement Probes, and Photo Optical Pick-Ups
- Signal Input:
  ICP™ (20 V at 3.5 mA), AC Signal, Tachometer (trigger input – photo optical, etc.) Power Input – Battery Charge

INPUT PARAMETERS

- Input Signal Range:
  - ICP™: 0 – 20V
  - Non ICP™: ± 12V, or 0 – 24V for Displacement
- Signal: RMS/Peak/Peak-to-Peak/True Peak
- Transducer Check: Bias Voltage Integrity (ICP™)
- Auto Range: Yes
- Dynamic Range: >85 dB (20 bit ADC sigma-delta)
- Amplitude Accuracy: 5%
- Input Connectors:
  - Signal: 4-Pin Fischer, 102 Type
  - Power In/Battery Charge: 2-Pin Fischer, 102 Type
  - Trigger: 3-Pin Fischer, 102 Type

MEASUREMENT PROCESSING

- Measurement Parameters: Acceleration, Velocity, Displacement, Voltage
- Measurement Types: Overall, PeakVue, Spectrum, Time Waveform, Order Normalized
- Range (Route and Off Route): 3 Hz to 40 Hz
- Frequency Range: DC to 40 kHz Maximum
- Integrated Measurements: 5% Accurate >10 Hz
- Bearing Condition: PeakVue
- FFT Resolution: 100 – 6,400 Lines (Route), 100 – 12,800 (Non-Route)
- Averaging: Spectral, Peak Hold
- Alarms: Overall and Spectrum
- Note Codes: 100 Note Codes (select up to 6 from 100)
- Measurement Windows: Hanning, and Rectangular

DATA PROCESSING AND STORAGE

- Microprocessor: MIPS
- Memory:
- OS 16 MB Flash
- Disk (User data) 8 MB Flash DATA DISPLAYS
- Spectrum, Time, Overall
  Up to 12 bands downloadable from host software

POWER

- Battery Size:
  Custom Rechargeable NiMH
  1800 mAhr removable battery pack
  No loss of data during battery charges
  Battery charges in the collector

PHYSICAL DATA

- Keyboard: Sealed chemical resistant elastomeric silicon, tactile touch, alpha-numeric
- Dedicated Keys: Up, down, right and left two enter keys for right and left hand operation
- LCD Screen: 1/4 VGA Monochrome Touch Screen, 240 pixels x 320 pixels (57mm x 76mm) Viewable
- Size:
  - 186mm x 93mm (7.44” x 3.72”) narrowest point
  - 186mm x 134mm (7.44” x 5.36”) widest point
- Weight: 700 grams (1.51 lb)

ENVIRONMENTAL

- ATEX: II 1G EEx ia IIC T4 (Ta -20°C to +50°C)
- CE Rated
- IP Rating: IP 65 (Dust and Waterproof)
- Temperature Range Storage:
  -20°C to +60°C (-4°F to +140°F)
- Temperature Range Operating:
  -10°C to +50°C (+14°F to +122°F)
- Humidity: 0-80% relative humidity, non-condensing
- EMC:
  - EN61000-6-4 (Emission)
  - EN61000-6-2 (Susceptibility)
- Drop Test: 1 Meter (3.3 Feet), to ATEX Spec

COMMUNICATIONS

- Communication: RS-232

HOST SOFTWARE

- AMS Suite: Machinery Health Manager v5.51 and higher

Standard Kit

The CSI 2125-IS Machinery Health Analyzer standard kit includes the following:

- CSI 215-IS Machinery Health Analyzer with single-channel route and off-route measurement firmware
- CD-ROM with CSI 2125-IS firmware, user manual, and firmware loader utility
- A212501-IS - Accelerometer, ATEX(100mV/g), top mount,
- MHM-91503 - Accelerometer cable, Fischer four pin, 2m(6.6ft.) coil, to two pin MIL
- MHM-91504 - AC/DC signal cable , Fischer four pin, 2m(6.6ft.), straight, to BNC
- MHM-91505 - Tach cable, Fischer three pin, 2m(6.6ft.), straight, to BNC
- MHM-91500 - Magnet accelerometer base (pull strength, 20kg, 1/4x28 UNF male thread, 35 mm two pole)
- MHM-91507 - Intrinsically safe battery pack
- MHM-91508 - Power adapter/charger
- MHM-91515 - Hard shell carrying case, double ABS shell, foam insert with cables pocket
- MHM-91518 - Leather hand strap
- MHM-91519 - Leather neckstrap
- MHM-91517 - Rubber boot sleeve
- MHM-91521 - Touchscreen stylus
- MHM-91502 - Serial to USB communications adapter cable

Accessory Options

Part # Description

- A212501-IS - Intrinsically Safe GPII ICP™ Accelerometer (100mV/g)
- MHM-91500 - Magnetic Mount, Pull Strength 20kg
- MHM-91501 - Magnetic Mount, Pull Strength 11kg
- MHM-91502 - RS232 cable Communications Cable
- MHM-91503 - Accel Cable (Fischer 102 type 4 Pin, 2m Coil, to 2 Pin Mil)
- MHM-91504 - Input Cable (Fischer 102 type 4 Pin, 2m Coil, to BNC)
- MHM-91505 - Trigger Cable (Fischer 102 type 3-Pin, 1m Coil, to BNC)
- MHM-91506 - Tach cable for Compact Instrument A2109 for use in IS areas
- MHM-91507 - Battery Pack for DC225-IS
- MHM-91508 - Power Adapter/Battery Charger for DC225-IS
- MHM-91509 - Power Supply Cable for Australia
- MHM-91510 - Power Supply Cable for Europe
- MHM-91511 - Power Supply Cable for S.Africa/India
- MHM-91512 - Power Supply Cable for U.K.
- MHM-91513 - Power Supply Cable for USA
- MHM-91514 - Power Supply Cable for Brazil
- MHM-91515 - Service Case, Double ABS Shell; foam insert and cable pocket.
- MHM-91516 - Leather Soft, Carrying Pouch
- MHM-91517 - Rubber Bump Sleeve
- MHM-91518 - Hand Strap
- MHM-91519 - Leather Neck-strap
- MHM-91520 - Leather Belt suitable for MHM-91516 soft case
- MHM-91521 - Stylus for DC225-IS

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